DRAFT INTERNAL USE ONLY

San Francisco Bay/Sacramento-San Joaquin River Bay Delta Conservation Plan (BDCP)
Summary & Update Paper
August 24, 2011

BACKGROUND: The San Francisco Bay/Sacramento-San Joaquin River Delta (Bay Delta Estuary) provides drinking water to 25 million Californians, sustains about $400 billion of annual economic activity, including agriculture, recreation, and commercial fishing, and is home to 55 species of fish and 750 species of plants and wildlife.

The upper estuary is composed of the Sacramento-San Joaquin River Delta (Delta), which is the hub of the nation's largest water delivery system, the State Water Project (SWP) and the federal Central Valley Project (CVP). The SWP and CVP divert water from the southern and deliver it to urban, industrial, and agricultural users. Water diversions through SWP and CVP are currently operating under Endangered Species Act (ESA) jeopardy opinions from USFWS and NMFS.[1]

The Bay Delta Estuary is in crisis. After decades of steep and steady decline, the ecosystem has reached a point of collapse. The long-term decline of native fisheries in the Bay Delta Estuary is dramatic and well-documented.[2] After 2001, many open water fish species, including two species that were previously the most abundant in the Estuary, suffered nearly simultaneous, sharp population declines. Impacts from water diversions, climate change, sea-level rise, drought cycles, seismic risks, and other stressors such as contaminants and invasive species, contribute to plummeting fish populations, aquatic ecosystem instability, water supply shortages and vulnerability.

BAY DELTA CONSERVATION PLAN (BDCP) is a habitat conservation plan under the Endangered Species Act intended to address the most critical water issues facing California by constructing new SWP and CVP diversion and conveyance structures and large-scale (100,000+ acres) aquatic habitat restoration. The BDCP and ESA permit applications (for the take of endangered and threatened species) aim to identify measures that avoid jeopardizing the continued existence and contribute *to* the recovery of endangered and sensitive species and their habitats, improve reliability and flexibility in water supply, and ensure the vitality of local communities and agriculture.

NEPA: The BDCP Environmental Impact Statement (EIS)is intended to support a number of regulatory decisions, including, but not limited to: (1) ESA permits from NMFS and FWS for the operation of SWP and CVP for the next 50 years; (2) change in the SWP and CVP point of diversion permit from the State Water Resources Control Board (State Water Board); (3) Clean Water Act (CWA) Section 401 certification for the Delta Conveyance Project from the State Water Board; (4) CWA Section 404 permit, Rivers and Harbors Act (RHA) Section 10 and Section 408 permits for any new Delta conveyance from USACE.[3] There are three federal lead agencies, USFWS, NMFS, and BOR on the BDCP NEPA document ("lead agencies"); EPA and US Army Corps of Engineers (USACE) are federal cooperating agencies. The California Department of Water Resources (DWR) is the lead State agency. EPA will also review and rate the BDCP NEPA document and provide oversight of USACE CWA Section 404 permit decisions.

The lead agencies have chosen to produce an EIS that contains ***programmatic*** information for the ecosystem restoration elements and ***project level*** information for the "Delta Conveyance Project" (relocation of pumps to the north Delta, new canal or pipeline to divert the water, operations plan for water diversion). The Delta Conveyance Project includes construction and operation of a maximum 15,000 cfs capacity canal or pipeline and 3 to 5 intake structures in or near the Sacramento River, south of Sacramento.

PROGRESS: The lead and federal cooperating agencies and DWR signed a NEPA-CWA-RHA MOU in August 2011 to streamline environmental review processes by integrating reviews for CWA and RHA using the BDCP EIS for two different sets of BDCP elements. First, the BDCP will be considered at the programmatic level of detail. Second, the new conveyance facilities and associated changes in operations for the SWP and CVP will be considered at the site-specific project level, with a goal of providing USACE with sufficient information to make permit decisions for these activities. Specifically, the BDCP NEPA document is intended to cover ESA permit decisions for species take and USACE permit decisions for any necessary (1) CWA Section 404 permit decisions to discharge dredged or fill material into waters of the U.S., (2) RHA Section 10 permit decisions to authorize work in, over, or under navigable waters of the U.S., including the diversion of water from navigable waters of the U.S., and (3) Section 408 permit decisions for alterations/modifications to existing USACE projects.

CWA 404 AND 401 ANALYSIS: Region 9 is working with USACE Sacramento District, State Water Board, and DWR on the CWA Section 404 and 401 process for the Delta Conveyance Projects. Issues include:

1. **Alternatives Analysis & LEDPA Identification:** The Delta Conveyance Project LEDPA analysis should include an estimate of impact to waters of the US from the proposed discharge of fill material (usually in acres of fill to waters). The LEDPA analysis should also include estimates of the impact of operations (water diversion) on water quality and designated uses. EPA recommended evaluating impacts to water quality that result from ecosystem enhancement and the Delta Conveyance Project during BDCP scoping,[4] including salinity, boron, total organic carbon, dissolved oxygen, mercury, selenium, and toxicity of unknown origin. EPA also suggested that broad water quality indicators may be insufficient to capture particular, localized water quality issues of interest. Ammonia and dissolved oxygen, for example, are site-specific water quality problems that should also be evaluated in the EIS. This water quality information should be considered in LEDPA identification.

   The impact of the Delta Conveyance Project on designated uses, such as estuarine habitat and fish migration corridors (e.g., salmon), should also be included in the LEDPA analysis and identification process. The loss of estuarine habitat (area of low salinity zone) is a significant contributor to recent open water fish population losses. During the last decade, SWP and CVP operations have moved the low salinity zone, measured by the location of "X2" (the distance from the Golden Gate Bridge to the place in the estuary where salinity is 2 parts per thousand), into the narrow channels of the eastern Delta, substantially reducing habitat for open water fishes during the fall months. USACE is estimating how the size of the low salinity zone changes in response to the Sacramento Deep Water Ship Channel dredging project for NEPA disclosure. This type of analysis is also appropriate for the Delta Conveyance Project LEDPA analysis because it provides a metric to estimate the impact to the amount of low salinity zone habitat under different operations alternatives. Information generated on water quality should also assist in identifying whether or not barriers to salmon migration exist from temperature or low dissolved oxygen.

2. **Coordinating CWA Programs:** SWRCB is responsible for issuing the 401 water quality certification. They are also planning to revise the Delta Outflow Criteria which are based on "X2" measurements. EPA will be recommending year-round Delta Outflow criteria that are protective of aquatic resource designated uses in all seasons. Ideally, the BDCP federal lead agencies would coordinate with EPA, USACE, and SWRCB to ensure that the preferred Delta Conveyance Project construction and operations identified in the BDCP EIS is consistent with CWA Section 404 LEDPA requirements and is informed by SWRCB plans to adjust the Delta Outflow Criteria. If these processes happen in series, which is the current plan, USFWS and NMFS may write ESA 50-year take permits for the Delta Conveyance Project that establish SWP and CVP operations that will be adjusted again when the SWRCB updates Delta Outflow Criteria.

3. **Potential for CWA 404 permit denial:** Certain alternatives for Delta Conveyance Project operations may cause or contribute to violations of state water quality standards and significant degradation of aquatic resources; two specified prohibitions to granting a permit under EPA CWA Section 404 regulations.[5] All waterways within the Delta are on the CWA Section 303(d) List of Impaired Water Bodies for salinity, toxicity, pesticides, metals, pathogens, nutrients, low dissolved oxygen, and invasive species. SWP and CVP operations currently pull cleaner Sacramento River water into the south Delta where salinity, selenium, low dissolved oxygen, pesticides and nutrients are substantial water quality problems. Diverting Sacramento River water in the north Delta, as planned under the BDCP, eliminates a dilution source and reduces circulation in the south Delta, potentially concentrating pollutants in the south Delta. As discussed above, we are also concerned that operations (magnitude, timing, and frequency of diversions) will cause significantly adverse effects to the salinity gradient and the amount of estuarine habitat for native and desired pelagic fishes and subsequently fish populations that are now at historic lows.

[1] Delta smelt, Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, North American green sturgeon, and Southern Resident killer whales

[2] JOHN E. SKINNER, AN HISTORICAL REVIEW OF THE FISH AND WILDLIFE RESOURCES OF THE SAN FRANCISCO BAY AREA 226 (Cal. Dept. of Fish and Game, Water Projects Branch Rep. No. 1, 1962), *available at* http://www.estuaryarchive.org/archive/skinner_1962/; W.A. Bennett & Peter Moyle, *Where Have All the Fishes Gone? Interactive Factors Producing Fish Declines in the Sacramento-San Joaquin Estuary, in* SAN FRANCISCO BAY: THE ECOSYSTEM 519, 519-42 (J.T. Hollibaugh ed., 1996); PETER MOYLE ET AL., 2010 CHANGING ECOSYSTEMS: A BRIEF ECOLOGICAL HISTORY OF THE DELTA (Feb. 2010), *available at* http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/intro_delta_history_14feb2010.pdf

[3] http://baydeltaconservationplan.com/EnvironmentalReviewProcess/AboutTheEIR.aspx

[4] May 19,2009 letter from EPA to USFWS regarding Scoping Comments on BDCP NOI *available at* http://www.epa.gov/region9/water/watershed/sfbay-delta/pdf/EPA_Comments_BDCP_3rdNO_051409.pdf

[5] 40 CFR 230.10(b)(1) and (c)